Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV • EXAMINATION – SUMMER 2013

Subject Code: 141303 Date: 14-06-2013

Subject Name: Chemical Engineering Processes

Time: 10:30am – 01:00pm Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the manufacturing process of aniline with a neat flow sheet. Discuss hazardous health aspects related to aniline.	**08**
	(b)	Write short note on: i) Adsorption ii) Heat Exchangers	**06**
Q.2	**(a)**	Write manufacturing process of Phenol with flow diagram and the related safety aspects.	**07**
	(b)	Explain the manufacturing process of Ethylene Chlorohydrin. Discuss related health and safety hazards.	**07**
		OR	
	(b)	Explain the manufacturing process of Monochloro Acetic acid along with its uses.	**07**
Q.3	**(a)**	List the advantages and disadvantages of using V_2O_5 catalyst in sulphuric acid manufacture.	**04**
	(b)	Write the properties of ammonia and its uses.	**04**
	(c)	Discuss the various types of conveyers used in industry for solid handling.	**06**
		OR	
Q.3	**(a)**	Write manufacturing process of Ethanol from ethylene by sulfonation.	**07**
	(b)	Write a note on various types of equipment used for crushing and grinding operations.	**07**
Q.4	**(a)**	With the help of a flowsheet explain the manufacturing process of Urea. List the uses of urea.	**08**
	(b)	Write short note on plate and frame filter press.	**06**
		OR	
Q.4	**(a)**	Discuss the major engineering problems in manufacture of urea.	**05**
	(b)	Discuss waste handling in manufacture of Acetic acid. Also list the uses of Acetic acid.	**05**
	(c)	Write a short note on Electrostatic Precipitator.	**04**
Q.5	**(a)**	Write in detail the manufacturing process of Ethyl Acetate.	**07**
	(b)	Explain hydrogenation of cotton seed oil with a flowsheet.	**07**
		OR	
Q.5	**(a)**	Describe the manufacturing process of Cellulose Acetate.	**07**
	(b)	Explain manufacturing process of Methanol with a flowsheet.	**07**

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